I'm writing because I have just read the proposed rules in a Feb. 14 FCC news release for regulation of Ultra Wide-Band (UWB) devices. If the language of the release is any measure of the complete document, it is appalling in its lack of knowledge or understanding of an entire geophysical technique and the associated industry which it threatens to destroy.

Ground Penetrating Radar (GPR) systems operate with very narrow pulses of high frequency radio energy, and are directed downward into the ground. Many systems have shields or "mirrors" above to prevent losses upwards. They have never been, and never will be a threat to conventional communications. The news release says: "Since there is no production UWB equipment available and there is little operational experience with the impact of UWB on other radio services,...".

1) This is totally erroneous. Commercial pulse-type GPR systems have been available in the US for more than 30 years (http://www.geophysical.com) , from Canada for almost two decades (http://www.sensoft.on.ca/), and from Europe for a similar period (http://www.malags.com/). Many thousands of these systems have been sold and are in use worldwide, and I know of no instances of RF interference.

Further, the proposed rules suggest extremely limited use: "Ground Penetrating Radar Systems: GPRs must be operated below 960 MHz or in the frequency band 3.1-10.6 GHz. GPRs operate only when in contact with or within close proximity of, the ground for the purpose of detecting or obtaining the images of buried objects. The energy from the GPR is intentionally directed down into the ground for this purpose. Operation is restricted to law enforcement, fire and rescue organizations, to scientific research institutions, to commercial mining companies, and to construction companies."

2) I am extremely opposed to this very narrow list of potential users of GPR systems. It would make most of the present owners of these expensive systems ($30-$60,000) illegal users. Many are used by Environmental and Engineering or Hydrogeological companies for site investigations, eg, looking for "lost" utility lines, pipelines, underground storage tanks, mapping water table, mapping ground-water contamination plumes, searching for caverns and other collapse features, etc. There are archaeological consulting companies who search proposed development areas (pipelines, construction sites, highways) for archaeological remains prior to disturbing the earth. Other service companies work with the US military to clear minefields here and abroad. GPR is the best technique (besides manual probing) for locating these non-metallic objects. GPR was used around the Ground Zero site in NY to map the "as constructed" positions of utility lines. State Agencies (MDEQ, for example) use GPR or hire contract GPR services for a number of purposes, including characterization of fuel spill sites, for locating lost and abandoned wells and pipelines, etc.

3) The above frequency range is restrictive and infringes on frequencies already in use by GPR systems. GSSI has at least two antennae which radiate at a center frequency of 1000 MHz (1 GHz), and one at 1.5 GHz.

In short, these Proposed Rules must be revised or dropped. One must ask why something like this is being proposed - is it a scheme to reserve a frequency band for some other new use? What is the economic power or interest behind this??

It would be very short-sighted to simply do away with an established geophysical method for investigating the interior of the earth. GPR is an established technique, just as is the seismic reflection technique. At our University, there is a 3-credit course taught just on GPR, similar to

methods courses for Reflection Seismology, for Magnetic Methods, for Gravity Methods, for Electrical Resistivity methods, and others. This is said just to illustrate that GPR is not some new or fringe geophysical technique, but is another valuable tool for subsurface investigations.

Please look into this matter and do what you can to alter this apparently misguided document so that the rules will have some semblance of fairness to established users of GPR systems.